

## **Cover sheet**

### **Title**

Individual and group-based parenting programmes for improving psychosocial outcomes for teenage parents and their children

### **Reviewers**

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### **Dates**

Date edited: 06/02/2002

Date of last substantive update: 21/05/2001

Date of last minor update: 30/05/2001

Date next stage expected: / /

Protocol first published: Issue 1, 2001

Review first published: Issue 3, 2001

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### **Intramural sources of support**

None

### **Extramural sources of support**

None

### **Contribution of reviewers**

Both reviewers worked on all stages of the review.

### **Acknowledgements**

We would like to thank Jane Dennis of the Cochrane Developmental, Psychosocial and Learning Problems Review Group for the provision of ongoing guidance and support, and Margaret Burke of the Cochrane Developmental, Psychosocial and Learning Problems Review Group for her assistance with database searching. We would also like to thank the HSRU for the financial support of the review.

**Potential conflict of interest**

None known.

## **What's new**

### **Dates**

Protocol first published:	Issue 1, 2001
Review first published:	Issue 3, 2001
Date of last substantive update:	21/05/2001
Date of last minor update:	30/05/2001
Date review re-formatted:	/ /
Date new studies sought but none found:	/ /
Date new studies found but not yet included/excluded:	/ /
Date new studies found and included or excluded:	/ /
Date reviewers' conclusions section amended:	/ /
Date comment/criticism added:	/ /
Date response to comment/criticism added:	/ /

## **Synopsis**

There is evidence from a range of studies which suggests adverse child outcomes for the children of teenage parents. Parenting programmes are increasingly being used to promote the well-being of parents and children, and this review aims to establish whether they can improve outcomes for teenage parents and their children.

The findings of the review are based on a small number of studies, and are therefore limited. The results suggest, however, that parenting programmes may be effective in improving a range of psychosocial and developmental outcomes for teenage mothers and their children. Further research is needed, particularly that which includes long-term follow-up of the children of teen parents and the role of young fathers as well as young mothers.

## **Abstract**

### **Background**

Rates of births to teenage parents are high and there is also a high incidence of poor outcomes among the children of teenage parents including developmental and learning problems, and child maltreatment. Parenting programmes may have an important role to play in improving outcomes for both teenage parents and their children.

### **Objectives**

The aim of this review was to examine the effectiveness of individual and/or group based parenting programmes in improving psychosocial and developmental outcomes in teenage mothers and their children.

### **Search strategy**

A range of biomedical and social science databases were searched including MEDLINE, EMBASE, CINAHL, PsychLIT, Sociofile, Social Science Citation Index, ASSIA, the Cochrane Library including SPECTR, CENTRAL, National Research Register (NRR) and ERIC.

### **Selection criteria**

Only randomised controlled trials were included in which participants had been randomly allocated to an experimental and a control group, the latter being a waiting-list, no-treatment or a placebo control group. Studies had to include at least one standardised instrument measuring maternal psychosocial health or infant health and development.

### **Data collection & analysis**

The included studies were critically appraised using a number of criteria including the method of allocation concealment. The treatment effect for each outcome in each study was standardised by dividing the mean difference in post-intervention scores for the intervention and treatment group, by the pooled standard deviation, to produce an effect size. Due to the presence of significant heterogeneity it was not possible to combine the results in a meta-analysis.

### **Main results**

The results of the review are based on data from four studies. These showed that both individual and group-based parenting programmes produced results favouring the intervention group on a range of maternal and infant measures of outcome including mother-infant interaction, language development, parental attitudes, parental knowledge, maternal mealtime communication, maternal self-confidence and maternal identity.

### **Reviewers' conclusions**

The conclusions which can be drawn from this review are limited due to the small number of included studies, and the use of a restricted number of outcomes measures. The conclusions are also limited by some of the methodological deficiencies of the included studies. Despite these problems the findings of the included studies suggest that parenting programmes may be effective in improving outcomes for both teenage mothers and their infants. There is, however, a need for further research into the effectiveness of parenting programmes for teenage parents.

## **Background**

### **1. The rate of births to teenage parents**

Rates of live births to teenage women are high throughout the post-industrialised world, with the USA having the highest rate (55 per 1000 women aged 15-19) followed by New Zealand (33 per 1000 women aged 15-19) and Canada (25 per 1000 women aged 15-19). The rate in the UK (23 per 1000 women aged 15-19 year) is the highest in Western Europe, being three times that of France (7 per 1000 women aged 15-19 years) and six times that of the Netherlands (5 per 1000 women aged 15-19) (SocialExclUnit 1999). Teenage pregnancy rates increase with deprivation levels, and the likelihood of teenage pregnancies continuing to term is greater among groups experiencing socio-economic deprivation. This reflects the fact that teenagers in more affluent environments are more likely to terminate the pregnancy (Smith 1993; Boulton-Jones 1995; SocialExclUnit 1999).

While there are cultural contexts worldwide in which it may not be unusual for children to be born to teenage mothers, there is some evidence that teenage pregnancy is also a concern in the developing world. A recent report of an international sexual health project operating in various locations including Belize, Burkina Faso, Dominican Republic, Gambia, Ghana, Guyana and India, identified considerable levels of concern expressed within communities about the issue of teenage pregnancy (Pyper 2000). A recent study in the rural area of Kwa-Zulu Natal in South Africa also reported that the adjustment to teenage motherhood was problematic for many young women (Parekh 1997).

### **2. The implications of early parenthood**

Early parenthood involves a conflict between the adolescent parent's own developmental needs and the needs of their child (Catrone et al 1984; Erf 1981; Wakschlag 2000). It represents an 'atypical early transition' which may in itself cause stress (Whitman et al 1987), and which can compromise the mother's educational attainment and longer term opportunities (Dawson 1997). Teenage mothers are more likely to have experienced adverse childhood factors including foster care and family violence and to have lower educational attainment, compared with non-mothering adolescents (Oz & Fine 1988). It has also been suggested that teenage mothers may have lower aspirations than non-parenting peers and may have come from a family with lower educational expectations (Brooks-Gunn 1995). This increases the possibility that some teenage mothers may have a reduced belief in their learning potential compared to their non-parenting peers, which may have implications as regards their 'cognitive readiness' for parenting (Parekh 1997; Whitman et al 1987; Held 1981).

There is some evidence of poorer outcomes for the children of teenage parents including developmental problems, intellectual deficiencies, developmental delays, behaviour problems, and lower school attainment (Whitman et al 1987; Wakschlag 2000). There is also evidence, however, to suggest that some children of adolescent mothers do not differ from other children on measures of development (Bucholz 1993). Younger parents may, however, lack knowledge of child development, and lack effective parenting skills (Bucholz 1993; Bavolek et al 1979; Reis & Herz 1987; Whitman et al 1987), due in part to their inexperience of life more generally (Utting et al

1993). There is evidence to suggest that maternal age can also have an impact on aspects of parenting such as maternal role satisfaction, mother-infant interaction and child outcomes (Ragozin et al 1982), parenting skills and attitudes to child discipline (Reis & Herz 1987), and on the development of realistic parental expectations of infant behaviour and development (Haskett et al 1994; Field et al 1980; Roosa 1983; Whitman et al 1987).

Some studies point to a higher risk of child maltreatment among younger parents (Wakschlag 2000; Bucholz 1993), although it is recognised that this risk is confounded by the environmental factors experienced by many younger parents, including socio-economic deprivation, lack of social support, depression, low self-esteem and emotional stress (Bolton et al 1980; Utting et al 1993). This suggests that in the absence of other factors the age of the parent is not necessarily a risk factor for child maltreatment.

### 3. The role of parenting programmes in improving maternal and child health

The needs of adolescent parents differ in specific ways from those of older parents. In particular, their developmental needs set them apart as a specific group, and the potential for negative outcomes for them and their children suggests the need for early intervention. The use of parenting programmes began in the 1960s, and the use of groups to train parents began in the 1970s. Parenting programmes are now being offered in a variety of settings, and a recent systematic review of randomised controlled trials reported that they are effective in changing parenting practices and improving behaviour problems in young children (Barlow 1997).

Parenting programmes also have an important role to play in the improvement of maternal well-being. A recent systematic review of randomised controlled trials reported that parenting programmes can be effective in improving maternal psychosocial health, including aspects of maternal functioning such as anxiety, depression, and self-esteem (Barlow & Coren, 2000).

There has been an increased interest in the prevention of teenage pregnancy, and projects with this particular goal have now been established in a number of countries (Perez 1997; Pierre 1997; Bilodeau 1994; SocialExclUnit 1999). A review of prevention programmes and practices has recently been completed (Franklin 2000). However, such professional intervention is unlikely to succeed in preventing teenage pregnancy entirely, and adolescent parents and their children will remain a high risk group. In addition, prevention is a long-term strategy, and the rate of births to teenage parents remains high. As such, interventions addressed at maximizing the parenting skills of adolescent parents may be crucial in optimising outcomes for both young parents and their children. There are a range of initiatives to support teenage parents across Europe, and their value as regards the mental health of teenage parents and their children has been acknowledged (MentalHealthEurope99). However, there is now a need to establish the impact of parenting programmes in particular, as regards both teenage parents and their children.

## Objectives

The aim of this review was to evaluate the effectiveness of individual and group-based parenting programmes in improving the psychosocial health of teenage parents and the developmental health

of their children. The review aimed to appraise and collate the evidence from studies which used rigorous methodological designs and a range of standardised outcome instruments.

## **Criteria for considering studies for this review**

### **Types of studies**

Randomised controlled trials in which participants have been randomly allocated to an experimental and a control group, the latter being a waiting-list, no-treatment or a placebo control group. Studies comparing two different therapeutic modality groups, but without a control group, were not included in the review.

### **Types of participants**

Parents below the age of 20 from either clinical or population samples.

### **Types of interventions**

Parenting programmes which met all of the following criteria were included in the review:

- \* Individual or group-based format
- \* Offered ante-or post-natally to pregnant or parenting teenagers
- \* Based on the use of a structured format
- \* Focusing on the improvement of parenting attitudes, practices, skills or knowledge

Parenting programmes which met any of the following criteria were excluded from the review:

- \* Standard antenatal programmes specifically addressing the pregnancy care needs of teenagers
- \* Programmes not specifically aimed at adolescent parents
- \* Programmes involving direct work with the children of teenage parents
- \* Programmes that aimed exclusively to prevent or reduce teenage pregnancy
- \* Programmes in which the parenting programme is combined with a home visiting intervention.

n.b. It should be noted that while home visiting programmes and parenting programmes combined with home visiting programmes have been excluded from this review, parenting programmes which are delivered on a one-to-one basis in the home have been included in the review. This reflects the fact that home-visiting programmes are qualitatively different interventions (e.g. broad based support which is provided on a frequent basis over an extended period of time) to parenting programmes which are delivered in the home (e.g. brief, structured programmes with a specific focus on parenting).

### **Types of outcome measures**

Studies that measured outcomes in either of the following areas using outcome instruments for which there is evidence of validity and reliability. The following types of outcomes were included:

- i) Maternal psychosocial health - anxiety and stress, depression, self-esteem, knowledge of parenting or child development, sense of competence in the parenting role
- ii) Infant health and development - infant cognitive, social, mental or developmental health



## **Search strategy for identification of studies**

The following electronic databases were searched:

1. Biomedical sciences databases

- MEDLINE Journal articles (1970 to 2000)
- EMBASE 1980-2000)

2. Social Science and General Reference databases:

- CINAHL (1982-2000)
- PsychLIT Journal Articles and Chapter/Books (1970 to 2000)
- Sociofile (1980-2000)
- Social Science Citation Index (1980-2000)
- ASSIA (1980-2000)

3. Other sources of information:

- The Cochrane Library including SPECTR, CENTRAL
- National Research Register (NRR)
- ERIC (1970-2000)
- Reference lists of articles identified through database searches were examined to identify further relevant studies. Bibliographies of systematic and non-systematic review articles were also examined to identify relevant studies

### **SEARCH TERMS**

The search terms used were modified to meet the requirements of individual databases as regards differences in fields. Preliminary searches indicated that a narrowing of the search strategy using terms designed to identify different study methodologies i.e. RCTs, resulted in the exclusion of many potentially relevant studies. As a result a wide search strategy was used without any specific methodological terms, to ensure that relevant studies were not missed.

The following search terms were used for the Cochrane Library and other databases:

(PARENT\* near PROGRAM\*)

(PARENT\* near TRAIN\*)

(PARENT\* near EDUCAT\*)

(PARENT\* near PROMOT\*)

PARENT-PROGRAM\*

PARENT-TRAIN\*

PARENT-EDUCAT\*

PARENT-PROMOT\*

HEALTH-EDUCATION\*:ME

HEALTH-PROMOTION\*:ME

EDUCATION\*:ME

ADOLESCENT-HEALTH-SERVICES\*:ME

((((((((((((#1 or #2) or #3) or #4) or #5) or #6) or #7) or #8) or #9) or #10) or #11) or #12)

(ADOLESCEN\* near PARENT)  
(ADOLESCEN\* near MOTHER\*)  
(ADOLESCEN\* near PARENT\*)  
(ADOLESCEN\* near FATHER\*)  
(TEEN\* near MOTHER\*)  
(TEEN\* near FATHER\*)  
(TEEN\* near PARENT\*)  
PREGNANCY-IN-ADOLESCENCE:ME  
(((((((#14 or #15) or #16) or #17) or #18) or #19) or #20) or #21)  
(#13 and #22)

## Methods of the review

### SELECTION OF TRIALS

Titles and abstracts of studies identified through searches of electronic databases were reviewed to determine whether they met the inclusion criteria. Titles and abstracts were identified by Esther Coren and read and reviewed by Esther Coren (EC) and Jane Barlow (JB). Full copies of those which appeared to meet the inclusion criteria were assessed by two independent reviewers (EC and JB). Uncertainties concerning the appropriateness of studies for inclusion in the review were resolved through consultation with a third reviewer, Sarah Stewart-Brown.

### QUALITY ASSESSMENT

Critical appraisal of the included studies was carried out by the two reviewers according to the criteria listed below. 'A' indicates the use of an adequate method of allocation concealment (for example, by telephone randomisation, or use of consecutively numbered, sealed, opaque envelopes). 'B' indicates uncertainty about whether the allocation was adequately concealed (for example, where the method of concealment is not known). 'C' indicates that the method of allocation was not adequately concealed (for example, open random number lists or quasi-randomisation such as alternate days, odd/even date of birth, or hospital number). The included studies were also appraised using the following criteria: the numbers of participants in each group, the method of dealing with attrition/drop-outs, and whether there was any assessment of the distribution of confounders. The results of the appraisal of these factors are provided in the narrative summary of the review.

### DATA MANAGEMENT

Data were extracted independently by two reviewers using a data extraction form and entered into RevMan 4.1. Where data were not available in the published trial reports, authors were contacted to supply missing information.

### DATA ANALYSIS

## TESTS OF HOMOGENEITY

An assessment was made of the extent to which there were between-study differences including the extent to which there were variations in the population, intervention or outcomes. Due to significant differences in the outcomes being measured, no attempts were made to combine the data in a meta-analysis.

## ANALYSIS OF MISSING DATA

Missing data and drop-outs were assessed for each included study. Assessment was also made of the extent to which studies conformed to an intention-to-treat analysis.

## DATA SYNTHESIS

The treatment effect for each outcome in each study was standardised by dividing the mean difference in post-intervention scores for the intervention and treatment group, by the pooled standard deviation, to produce an effect size. Due to the heterogeneity in the four included studies, i.e. they all measured different outcomes, it was not possible to combine the data in a meta-analysis. The effect sizes and 95% confidence intervals for individual outcomes in individual studies have been presented.

## Description of studies

A total of 290 abstracts were reviewed. All of the databases searched yielded relevant abstracts except for the National Research Register which yielded none. A number of abstracts were replicated between databases. Where it was apparent from the abstracts that the study was solely concerned with the prevention of teenage pregnancy, these were not reviewed. Four abstracts were reviewed from MEDLINE, five from EMBASE, 17 from CINAHL, 10 from ASSIA, 55 from ERIC, 72 from PsychINFO and 62 from the Social Science Citation Index. All the articles reviewed were written in the English language.

A number of abstracts were identified whose source was listed as Dissertation Abstracts International. Full copies of these studies were not available due to the fact that many were doctoral theses published in the USA. These theses were therefore not reviewed. Of the 290 abstracts reviewed, 267 proved to be of no direct relevance. Many of these abstracts did not deal with parenting programmes but were identified as a result of the wide search strategy used. A number of the excluded papers did not evaluate the effectiveness of interventions, and some were aimed at the evaluation of preventive programmes. A number of papers were excluded for methodological reasons or because they did not meet the specified inclusion criteria e.g. the study did not include appropriate outcomes, the intervention was offered on a home-visiting basis only or comprised a standard ante-natal programme consisting of the usual medical and ante-natal care.

Of the 23 studies reviewed, a further 19 were excluded. Of these, 12 were excluded for primarily methodological reasons, i.e. because they were not RCTs or did not use a control group (Badger 1981, Britner 1997, Butler et al 1993, Cook et al 1995, Dickenson 1992, Emmons & Nystul 1994, Fulton et al 1991, Kissman 1992, Roosa & Vaughn 1983, Roosa 1984, Treichel 1995, Weinman et al 1992). Five studies were excluded because they included a home visiting component (Brophy &

Honig 1997, Field et al 1980, Field et al 1982, Koniak-Griffin 1999, Wagner&Clayton 1999). One study was excluded because no standardised outcome measures were used (Westney et al 1987) and a further study was excluded because the programme being evaluated included only a few psychosocial and parenting components in what was essentially a typical ante-natal programme (Porter 1984). The final review included four RCTs of the effectiveness of parenting programmes for teenage parents (Black and Teti 1997; Lagges & Gordon 1999; Truss et al 1977; Koniak-Griffin 1992).

Koniak-Griffin 1992 conducted an RCT with pre- and post -intervention measures. 31 adolescent mothers of healthy infants were recruited from a residential maternity home of which 15 were in the intervention group and 16 were in the control group. The parenting programme was provided on a one-to-one basis and involved the use of structured tasks which were recorded on videotape with feedback from a nursing professional. The outcomes which were assessed included maternal attitudes and behaviour and infant communication (Nursing Child Assessment Teaching Scale).

Black and Teti 1997 conducted an RCT with pre- and post-intervention measures. The authors recruited 59 first time African American adolescent mothers of infants from high schools, woman and child clinics (WIC), & low income family support centres. There were 26 mothers in the intervention group and 33 mothers in the control group . The parenting programme was provided on an one-to-one basis using culturally sensitive videotaped vignettes to model mealtime behaviour. Maternal attitudes to infant mealtime behaviour and communication were assessed pre- and post-intervention using two instruments - About Your Child's Eating Questionnaire and the Parent-Child Early Relational Assessment (modified).

Lagges & Gordon 1999 conducted a cluster randomised controlled trial that involved the random assignment of classes and used pre- and post-intervention measures. 62 pregnant or parenting adolescents that were enrolled in the school based GRADS programme were recruited to the intervention then randomised by class. There were 33 mothers in the intervention group and 29 mothers in the control group . The parenting programme was provided on an one-to-one basis and comprised an interactive videodisc programme that addressed communication skills, problem solving, parenting skills. Parenting knowledge and attitudes were measured at pre- and post-intervention stages using the Parental Attitudes Questionnaire and the Parenting Knowledge Test .

Truss et al 1977 conducted an RCT with pre and post measures. 127 pregnant or parenting adolescents were recruited whose babies would be aged <6 months at start of the programme, from an outpatient clinic with a programme for teenage parents. There were 83 mothers in the intervention group and 12 in the control group. Thirty two participants who did not complete the programme were not included in the analysis. The parenting programme was group-based and focused on child management and effective stimulation of infants. Booklets were mailed for 48 months that were appropriate to the child's developmental stage. Infant cognitive development (language acquisition) was measured using the Bzoch-League Receptive-Expressive Emergent Language Scale.

## **Methodological quality of included studies**

### **ALLOCATION CONCEALMENT**

None of the included studies specified the method of allocation concealment. Attempts were made to contact three authors to ascertain more details. It was not possible to contact the fourth author (Truss et al 1977). Of the three authors that were contacted, only one replied (Lagges & Gordon 1999). In this instance a random number table was used to assign the school classes to the different conditions. The author stipulated that students were not explicitly told which group they were in.

### **NUMBERS OF PARTICIPANTS IN GROUPS**

The numbers in two of the studies appeared to be small (Koniak-Griffin 1992, n=31, Lagges & Gordon 1999, n=8 classes). In the case of Lagges & Gordon 1999 a cluster randomised trial design was used in which 8 classes were randomised to the intervention or the control group. The randomisation of clusters can result in an overestimate of the precision of the results (with a higher risk of a Type I error) where their use has not been compensated for in the analysis. No information was provided as to whether any account was taken of this 'design effect' in the sample size calculations. The results of this study should therefore, be treated with caution (for further details see Discussion section below).

None of the three remaining included studies provided details regarding the sample size calculations or any information about the size of the changes that the study was powered to detect.

### **BLINDING**

In trials of parenting programs, it is not possible to blind either facilitators or parents to the type of treatment being implemented or received. One of the methods of minimising bias arising from the failure to blind parents and study personnel is to blind the assessors of clinical outcomes. None of the included studies used outcome measures which required independent assessment i.e. all of the studies used self-report measures, and blinding was therefore, once again, inappropriate.

### **ACCOUNTING AND ATTRIBUTING PARENTS AT THE END OF THE STUDY**

Three studies accounted for participants who dropped out of the evaluation or who were lost to follow-up (Black and Teti 1997; Lagges & Gordon 1999; Truss et al 1977). Drop-out ranged from 8% to 33%. Only one study provided information as to why parents did not continue with the programme (Truss et al 1977), and two studies provided details about the demographic characteristics of the parents who dropped out (Black and Teti 1997; Truss et al 1977). In both studies there were no significant differences between completers and non-completers.

None of the studies included in this review analysed participants in the groups to which they were randomised irrespective of whether they dropped out or were lost to follow-up (i.e. intention-to-treat), and the result of this may well be an overestimation of the treatment effect.

## DISTRIBUTION OF CONFOUNDERS

While the use of randomisation should in theory ensure that any possible confounders are equally distributed between the groups, the randomisation of small numbers of study participants may result in an unequal distribution of confounding factors. Only one study provided information on the distribution of possible confounders (i.e. to what extent the control and intervention groups were similar at the start of the trial) (Lagges & Gordon 1999).

## Results

The following section provides a summary of the results of the included studies. All of the results for each study have been reported except where measures had been constructed specifically for the purpose of the study i.e. measures for which there was no evidence of validity and reliability. The only measures not to be reported are as follows: a supplementary questionnaire designed to assess confidence in the role

of parent, the quality and quantity of time spent with children, the frequency of spanking and level of empathy; four 'Scenarios' likely to be encountered with children - all constructed specifically for the purpose of the study (Lagges & Gordon 1999); Bayley Scales of Infant Development - no results reported (Truss et al 1977).

The results are presented as effect-sizes and 95% confidence intervals and a minus sign indicates that the results favour the intervention group. It should be noted that the post-intervention scores have been used to calculate effect sizes rather than the change scores (i.e. pre to post scores for each group). This reflects the fact that a change standard deviation is required to calculate change scores, and these data were not available for any of the included studies.

Section One presents the results for measures of child outcome, and section two presents the results for measures of maternal outcome.

### SECTION ONE: CHILD OUTCOMES

1:1 Nursing Child Assessment Teaching Scale (Barnard 1978, Barnard 1989) (Responsiveness to Parent Subscale)

Koniak-Griffin 1992 evaluated a parenting programme which was delivered on an one-to-one basis in the home, using video-tape instruction with feedback. The study assessed mother-infant interaction using the Nursing Child Assessment Teaching Scale (NCATS). The NCATS measures mother-infant interaction using six subscales, four of which assess the caregiver's behaviour in interactions and the remaining two measure aspects of infant interaction. The Responsiveness to Parent Subscale measures the extent to which the infant responds positively to the parent. The results for this subscale show a large but non-significant effect favouring the infants in the intervention group -0.71 [-1.44, 0.02]

1:2 Nursing Child Assessment Teaching Scale (Baby Subscale)

The above study evaluated the effectiveness of a videotape parenting programme in improving the



clarity of infant cues in interaction using the Baby subscale of the Nursing Child Assessment Teaching Scale (NCATS). The results show a non-significant difference favouring the infants in the intervention group -0.51 [-1.23, 0.21].

1:3 Bzoch-League Receptive-Expressive Emergent Language Scale (Bzoch & League 1971)  
(Receptive Language Score)

Truss et al 1977 evaluated the effectiveness of a 10-12 week group-based parenting programme, focused on the promotion of infant development. In addition, participants in the intervention group were sent booklets every two months for the first 48 months of the child's life, which were designed to enhance mother-infant interaction. The infant's ability to understand and respond to language was measured using the Receptive Language score of the Bzoch-League Receptive-Expressive Emergent Language Scale. The results show a non-significant effect favouring the infants in the intervention group -0.52 [-1.13, 0.09].

1:4 Bzoch-League Receptive-Expressive Emergent Language Scale (Expressive Language Score)

Truss et al 1977 also evaluated the effectiveness of the above parenting programme on infant expressive language using the Expressive Language Score of the Receptive-Expressive Emergent Language Scale. The results show a small non-significant effect favouring the infants in the intervention group -0.24 [-0.84, 0.37].

1:5 Utah test of Language Development (Mecham et al 1967).

Truss et al 1977 evaluated the effectiveness of the above parenting programme on language development using the Utah test of Language Development. It should be noted that this was measured at 2-years of age i.e. 1 year later than all of the other included measures from this study. The results show a non-significant effect favouring the infants in the intervention group -0.20 [-0.91, 0.50].

## SECTION TWO: PARENT OUTCOMES

### 2:1 Parental Attitudes Questionnaire

Lagges & Gordon 1999 evaluated a brief interactive laser-disc parent-training programme with group discussion. Parental attitudes were assessed using the Parent Attitudes Questionnaire. It should be noted that the only validity and reliability data for this instrument are provided in unpublished doctoral dissertations, and that test-retest reliability is described in the text of the current study. The results show a non-significant effect favouring the intervention group -0.5 [-1.07, 0.07].

### 2:2 Parenting Knowledge Test (Hupertz 1995; Kacir 1997; Segal 1995)

Lagges & Gordon 1999 also evaluated the effectiveness of the above parenting programme in improving parenting knowledge using the Parenting Knowledge Test. It should be noted that there were no published validity and reliability data for this measure, and it may be that it was designed specifically for the purpose of this study. The results show a large and significant effect favouring the intervention group -0.95 [-1.54, -0.36].

### 2:3 About Your Child's Eating Questionnaire (Davies et al 1993)

Black and Teti 1997 used a 15 minute, culturally sensitive video-tape to model appropriate mealtime behaviours for African-American adolescent mothers. Changes in parent attitudes to mealtimes were assessed using the 'About Your Child's Eating' questionnaire. The results show a large significant effect favouring the parents in the intervention group -1.28 [-1.84, -0.71].

### 2:4 Parent-Child Early Relational Assessment (modified) - Maternal Mealtime Communication (Clark 1999; Farran 1990)

Black and Teti 1997 used a modified version of the Parent-Child Early Relational Assessment to measure changes in maternal mealtime communication. The results once again show a large and significant effect favouring the parents in the intervention group -0.54 [-1.07, -0.02].

### 2:5 Nursing Child Assessment Teaching Scale (Total Score)

Koniak-Griffin 1992 evaluated the effectiveness of the parenting programme described in section 4.1 above, in improving mother-infant interaction using the Nursing Child Assessment Teaching Scale. The results for the total score show a large significant effect favouring the parents in the intervention group -0.79 [-1.53, -0.06].

### 2:6 Nursing Child Assessment Teaching Scale (Mother's Subscale)

Koniak-Griffin 1992 evaluated the effectiveness of the parenting programme described in section 4.1 above, in improving maternal sensitivity in interaction using the mother's subscale of the NCATS. The results show a large significant effect favouring the parents in the intervention group -0.82 [-1.56, -0.08].

### 2:7 Nursing Child Assessment Teaching Scale (Cognitive Growth Fostering Subscale)

Koniak-Griffin 1992 evaluated the effectiveness of the parenting programme described in section 4.1 above in improving the cognitive growth fostering capacities of the mothers in their study using the Cognitive Growth Fostering subscale of the NCATS. The results show a large significant effect favouring the parents in the intervention group -0.61 [-1.34, -0.11].

### 2:8 Semantic Differentials Measure (Walker 1980; Walker 1982)- Myself as Mother

Koniak-Griffin 1992 evaluated the effectiveness of the parenting programme described in section 4.1 above in improving aspects of maternal identity using the 'Myself As Mother' subscale of the Semantic Differentials Measure. This subscale measures the evaluative dimension of the concept 'myself as mother'. The results show a significant effect in favour of the intervention group -0.81 [-1.55, -0.08].

### 2:9 Semantic Differentials Measure - My Baby

Koniak-Griffin 1992 evaluated the effectiveness of the parenting programme described in section 4.1 above in improving aspects of maternal identity that relate specifically to maternal beliefs or attitudes about their child, using the 'My Baby' subscale of the Semantic Differentials Measure. The results show a significant effect in favour of the intervention group -0.78 [-1.51, -0.04].



#### 2:10 Pharis Self-Confidence Scale (Pharis 1978)

Koniak-Griffin 1992 used the Pharis Self-Confidence Scale, to evaluate the effectiveness of the parenting programme described in section 4.1 above, in improving maternal self-confidence in regular child-care tasks. It should be noted that the only validity and reliability data for this instrument are provided as part of an unpublished doctoral dissertation. The results show a non-significant effect favouring the intervention group -0.42 [-1.13, 0.29].

#### 2:11 Caldwell Home Inventory (Birth to Three) (Bradley/Caldwell1977)(Maternal Involvement with the Child)

Truss et al 1977 evaluated the effectiveness of the parenting programme described in section 1.3 above, in improving maternal motivation using the HOME Inventory. The results show a non-significant effect favouring of the intervention group -0.35 [-1.00, 0.31].

## **Discussion**

The results of this review are based on the findings from four studies. One of the four included studies utilised a cluster randomised controlled design in which random allocation was undertaken using classrooms rather than individual children (Lagges & Gordon 1999). No allowance was made in this study for the 'design effect' which is defined as the ratio of the total number of participants required using cluster randomisation, to the number required using individual randomisation. Furthermore, no account was taken of the cluster design at the analysis stage of the study. Failure to take account of the cluster design can result in a Type I error, or an increased likelihood of a positive treatment effect (Cornfield 1978; Donner 1982; Murray et al 1994; Rooney & Murray 1996). The results of this study should therefore be treated with caution.

The small number of eligible studies limits the conclusions that can be reached in this review. A total of four measures of infant outcome were obtained. Two of these produced large but non-significant results favouring the intervention group (Koniak-Griffin 1992 ; Truss et al 1977). These results suggest that parenting programmes, both individual and group-based, which are directed specifically at teenage parents may be effective in improving important infant outcomes such as the infant's response to the parent, the clarity of the infant's cues, and the infant's ability to understand and respond to language. Three of the twelve results obtained for parental outcome measures (including parenting attitudes, knowledge, and skills) were produced by the Lagges & Gordon 1999 study, which used a cluster randomised design. As was suggested above, some caution should therefore be exercised in the interpretation of these large significant results. One study reported large significant changes in maternal sensitivity, maternal identity, maternal self-confidence and the cognitive growth fostering capacities of the mother (Koniak-Griffin 1992), and a further study reported large significant differences post-intervention in maternal attitudes to mealtimes and maternal mealtime communication (Black and Teti 1997).

The included studies reflect the wide range of settings in which interventions for teenage parents are provided including a school-based programme (Lagges & Gordon 1999), a health setting (Truss et al 1977), a residential maternity home (Koniak-Griffin 1992), community health clinics

and family support centres (Black and Teti 1997). Only one study, however, provided information regarding the programme providers, who in this case were nursing practitioners (Koniak-Griffin 1992).

It should be noted that two of the instruments used in one study did not have published validity and reliability data available (Lagges & Gordon 1999) and in one study it was suggested that an instrument was used to measure infant development for which no data were provided (Truss et al 1977).

The generalisability of the results obtained from the four included studies is compromised due to a number of factors. Although the mean drop-out rate in the included studies was much lower than the usual 28% (Forehand 1980), the upper limit for parental drop-out was 33% in one study (Truss et al 1977). Research concerning the factors that predict drop-out from parenting programmes has suggested that teenagers are more likely to dropout than older parents (Danoff et al 1994). It has also been suggested that mothers reporting greater stress from their relations with the child, their own role functioning, and life events; and families being at greater socio-economic disadvantage (Kazdin 1990) have a higher likelihood of attrition. Other studies have identified individuals more likely to drop out as including those from a lower social class or an ethnic minority (Farrington 1991, Strain et al 1981, Holden et al 1990). In view of the prevalence of these social circumstances among the teenage parenting population, the attrition from the studies discussed here may be seen as encouragingly low.

All of the included studies were based on samples of parents who had volunteered to take part in the study. Parents who self-refer or who volunteer to take part in parenting programmes may not be representative of the wider group of parents, perhaps most importantly due to the fact that volunteers are very often better motivated than parents who have been referred by professional agencies. This, once again, limits the generalisability of the results.

The four studies included in this review were all directed at teenage mothers. While one study recruited fathers it did not include the results obtained from fathers in the analysis (Lagges & Gordon 1999). The findings from this review should not therefore be generalised to both parents. One study was specifically directed at African-Caribbean mothers (Black and Teti 1997) whilst the others all included a mixed ethnic profile of mothers. This suggests that the findings are relevant to parents from a range of ethnic groups. However, all of the studies were conducted in the USA, and caution should therefore be exercised before the findings are generalised to other social and cultural contexts.

## **Reviewers' conclusions**

### **Implications for practice**

The results of this review are necessarily limited due to the small number of included studies. Despite the methodological problems referred to, the results indicate that parenting programmes may be effective in improving a range of outcomes for both teenage parents and their infants.

The four studies on which the results of this review are based all evaluated parenting programmes which were provided to teenage mothers in a variety of locations including health, education and community settings. None of the studies discuss the rationale for the location of the service provision and the reasons may have been pragmatic. The range of settings identified in this study points to the need for service providers to consider in which settings programmes can be provided most optimally, in order to maximise beneficial outcomes for parents and their children. In view of the small numbers and the high level of drop-out and attrition in some of the included studies, further consideration should also be given to methods of recruiting and retaining teenage parents to parenting programmes, which would maximise their participation. Furthermore, whilst there appears to be considerable development of services for teenage parents across a range of different settings, there is very little discussion in the literature concerning the nature or methods of coordination between the different providers.

While there is some research evidence that indicates the important role that may be played by teenage fathers in the transition to parenthood of a teenage mother (Westney et al 1987), fathers have on the whole tended to be 'neglected or misunderstood' in the development of service provision (Kiselica 1999). Difficulties which have been identified in recruiting low-income fathers to parenting interventions include a lack of commitment by fathers to the mother or the child, mistrust of services, illiteracy and personality problems (Honig 1991). However, some studies demonstrate the benefits of involving fathers in programme provision for fathers in general (McBride 1991), and teenage fathers in particular (Westney et al 1987). The evidence points to a need to facilitate greater involvement of teenage fathers in parenting programmes.

### **Implications for research**

This review reflects the paucity of rigorous research evaluating the effectiveness of parenting programmes for teenage parents. While the results suggest that parenting programmes may be effective in improving outcomes for teenage parents, the conclusions that can be reached are limited due to the small number of studies included in the review and the limited number of outcomes that were measured.

This review points to the need for more rigorous studies of the effectiveness of both individual and group-based parenting programmes in improving both maternal and infant/child outcomes for teenage mothers. In particular, there is a need for studies which recruit larger numbers of teenage parents thereby improving the external validity of the research.

None of the included studies discuss the role of process factors e.g. group processes or facilitator skills, as regards the outcomes obtained.

Peer group relations may be an important consideration for teenage parents who are deciding whether to take part in a parenting programme, and it would be useful for service evaluators to consider the benefits of group-based programmes from this perspective. The potential role of the group process in interventions with teenage mothers has been acknowledged (Schamess 1990; Parekh 1997). There is very little research available to date, however, that addresses the role of group processes in producing positive outcomes with regard to parental functioning. It seems likely, nevertheless, that the group facilitator/leader has an important part to play in helping parents not only to persist with a particular programme (Frankel 1992), but in facilitating an atmosphere of openness and trust between the participating parents, and in helping parents to feel respected, understood, and supported. Group leaders can play an important role in modelling attributes such as empathy, honesty and respect, and personal qualities such as a sense of humour, enthusiasm, flexibility, and warmth.

In addition, future studies would ideally include the evaluation of a wider range of outcomes, in particular those for which there is existing evidence of poorer outcomes for the children of teenage parents including developmental problems, intellectual deficiencies, developmental delays, behaviour problems, child maltreatment, educational outcomes and life chances generally. Furthermore, many of the negative outcomes identified in the literature on teenage parents have implications not only for infants but for older children as well. This points to the need for longer-term follow-up studies which measure outcomes in older children.

Future studies should include parents other than volunteers i.e. parents who have been referred to parenting programmes. There is also a need to include teenage fathers in studies of the effectiveness of parenting programmes for teenage parents.

The future evaluation of parenting programmes in school-based settings may involve the use of a cluster randomised design. Where such a design is used there is a need for greater rigour, in particular as regards compensating for the effects of allocating clusters in both the sample size calculations and the analysis of the data.

## Characteristics of included studies

Study ID	Methods	Participants	Interventions	Outcomes	Notes	Allocation concealment
<b>Black and Teti 1997</b>	RCT with pre and post measures	59 invited first time African-American adolescent mothers (<20 years of age) of healthy infants. Recruited from schools, mother and child clinics and family support centres	Intervention provided on a one-to-one basis. Video-tape modelling and feeding observation (n=26). No treatment control group (n=33).	Maternal attitudes to mealtime communication; maternal mealtime communication		B
<b>Koniak-Griffin 1992</b>	RCT with pre and post measures	31 volunteer adolescent mothers (<20 years of age) recruited from a residential maternity home	Intervention provided on a one-to-one basis with video-tape modelling and feedback (n=15). Placebo control group (n=16).	Maternal behaviour and infant responsiveness to mother; maternal identity; self-confidence in infant care		B
<b>Lagges &amp; Gordon 1999</b>	Cluster randomized RCT with pre and post measures	62 volunteer pregnant or parenting adolescents recruited in classes from a school-based programme for teen parents	Individual intervention with group component. Interactive videodisc parenting programme (n=33). Waiting-list control group. (n=29)	Parental attitudes; parenting knowledge; video scenarios		B
<b>Truss et al 1977</b>	RCT with pre and post measures	127 volunteer teenage expectant or parenting mothers recruited from a clinic with a programme for teenage parents	Group-based programme with mailing of booklets for 48 months (n=127). Control group (n=37).	Infant cognitive and language development; maternal involvement with child		B

## Characteristics of Excluded studies

Study ID	Reason for exclusion
<b>Badger 1981</b>	No control group. Compares weekly postnatal mother-infant parenting classes with weekly non-instructive home-visiting programme. Also Compares high- and low-risk mothers. Results at 12 months showed that infants of high-risk mothers in the parenting classes performed better than those of high-risk mothers receiving home visits on scales of infant development. There was no difference on performance for infants of lower risk mothers in either group. n=48 mother-infant pairs.
<b>Britner 1997</b>	Not randomised - matched controls only. 12-week group-based programme of parent education and support designed for adolescent mothers at risk of child maltreatment. Results showed fewer substantiated allegations of child maltreatment, higher levels of school completion, lower levels of subsequent pregnancies, and short term gains in parenting knowledge and attitudes for parents in the intervention group. Intervention n=125; Control n=410.
<b>Brophy &amp; Honig 1997</b>	Home visiting programme. Mothers randomly assigned to the intervention group received weekly home visits for 3 months. Results showed no significant differences in parenting skills between the groups. Maternal reflectivity was more significantly related to positive parenting practices than programme participation. Intervention n=27; control n=19.
<b>Butler et al 1993</b>	No control group - matched comparison group only. Year long peer (college students) advocacy intervention programme aimed at reducing stress and enhancing parental competencies. Parenting attitudes of the intervention group post-intervention were significantly better than those of the control group. Intervention n=29; control n=28
<b>Cook et al 1995</b>	No control group. Comparison group of non-pregnant/parenting teenagers. In-school programme (GRADS) widely offered in US designed to maintain school attendance. Includes parenting and child development components. Study evaluated the impact of the programme on locus of control and self-esteem. Results showed no differences between the groups. n=85 group participants.
<b>Dickenson 1992</b>	No control group. Programme delivered via booklets sent monthly to participants. Results suggest a positive impact on parenting attitudes, beliefs and practices. 70 participants completed post-test measures of

	118 originally recruited.
<b>Emmons &amp; Nystul 1994</b>	Non random allocation. Prenatal group that included PREP for Effective Family Living Program. Treatment group scored higher on democratic parenting attitudes than comparison groups. No significant differences in self-concept. Intervention n=9 mothers; comparison groups n=9; n=10.
<b>Field et al 1980</b>	Home visiting programme. Bi-weekly 2-person half-hour home visits to promote mothers knowledge of child care and development, facilitate positive interactions and age-appropriate stimulation. Improvements for intervention group both in terms of the mothers' attitudes and expectations, and infant growth and development. n=150 mothers including 60 teenage mothers of preterm infants.
<b>Field et al 1982</b>	Comparison between 2 intervention groups and a control group. One intervention included home visits, and the other involved parent and job training in a nursery context. The results showed greater benefits for mothers taking part in the nursery intervention. Growth and development of infants in both intervention groups was better than that for the control group. n=80 mothers
<b>Fulton et al 1991</b>	No control group. 4-month programme including professional home visits (twice monthly) and centre visits by the parent (alternate weeks) to disseminate information about parenting and child development. Results showed post-test improvements in knowledge of child development. No difference in self-esteem between the beginning and end of the programme. 10-month follow-up showed that none of the programme participants had been reported for child maltreatment. n=76.
<b>Kissman 1992</b>	Unclear allocation method. Weekly group-work sessions for one academic year in a school setting using cognitive-behavioural approach aimed at strengthening parenting skills, stimulating social support and increasing parenting knowledge. Results show improvements for intervention group in social support utilisation and parental attitudes. Intervention n=25; Control n=94.
<b>Koniak-Griffin 1999</b>	No information about group assignment. Parenting programme delivered via 4 group meetings and 17 home visits. The results showed that the intervention group had better perinatal outcomes, and reduced infant hospitalisations. Intervention n = 63 and control n=58
<b>Porter 1984</b>	Not a parenting programme. Group and Individual components. Ante-natal programme including health promotion. Aims include strengthening self-esteem, enhancement of self-care, child



- development and general infant health care.' Patient-centred approach'. No information available about outcomes.
- Roosa & Vaughn 1983** Non RCT. 3 groups: 1) mothers attending alternative school curriculum including family living, parenting and child development, with infants in nursery programme; 2) alternative curriculum without nursery provision; 3) receiving standard curriculum. Results show few major differences between the groups except for maternal educational progress, and mother's knowledge of human reproduction which were higher for mothers in alternative programme. Group 1 n=15; Group 2 n=23; Group 3 n=24
- Roosa 1984** No control group. Subjects recruited from 3 school-based programmes in Arizona. 31 subjects completed questionnaires at pre and post test. Programmes included courses on family life, parenting & child development but the overall aim of the programmes was the promotion of educational outcomes. Positive results for knowledge of child development but no change in maternal attitudes.
- Treichel 1995** No control group. Support and information about parenting provided in groups facilitated by women who were once adolescent mothers. Groups met weekly for 2 years. Results show positive shift in attitudes and beliefs for parenting/nurturing children. n=336 participants across 41 sites. 79 completed AAPI.
- Wagner&Clayton 1999** Home visiting programme. Parent educators aim to strengthen parenting skills & child development knowledge and prepare children for school. Some positive effects on parental attitudes, knowledge and behaviour. No gains in child development or health for whole group but sub-group analyses revealed some benefits. Intervention n=298; control n=199.
- Weinman et al 1992** No control group. Parent education program offered intensively for 8 weeks to adolescent mothers and their children. Positive results post-test on AAPI, maintained at follow-up. Changes also on self-image questionnaire, although no change was evident on Future Events Test and Locus of Control . n=73.
- Westney et al 1987** Unvalidated measures used. Ante-natal education aimed at adolescent expectant fathers. Experimental group showed significant gains in knowledge for pregnancy, pre-natal care, infant development and child care at post-test. Intervention n=15; control n=13.



## References to studies

### Included studies

**Black and Teti 1997** {published data only}

Black M M and Teti L O. Promoting Mealtime Communication Between Adolescent Mothers and Their Infants Through Videotape. *Pediatrics* 1997;99(3):432-437.

**Koniak-Griffin 1992** {published data only}

Koniak-Griffin D, Verzemnieks I and Cahill D. Using Videotape Instruction and Feedback to Improve Adolescents' Mothering Behaviours. *Journal of Adolescent Health* 1992;13:570-575.

**Lagges & Gordon 1999** {published data only}

Lagges A M and Gordon D A. Use of an Interactive Laserdisc Parent Training Program with Teenage Parents. *Child and Family Behavior Therapy* 1999;21(1):19-37.

**Truss et al 1977** {published data only}

Truss C V, Benson J F, Hirsch V A , Lickiss K. Parent Training in Preprimary Competence. EDRS Availability: Microfiche and Paper 1977.

### Excluded studies

**Badger 1981** {published data only}

Badger E. Effects of Teenage Parent Education Program on Teenage Mothers and Their Offspring. In: Scott, K. G.; Field, T. and Robertson, E, editor(s). *Teenage Parents and Their Offspring*. New York: Grune and Stratton, 1981:283-310.

**Britner 1997** {published data only}

Britner P A and Reppucci N D. Prevention of Child Maltreatment: Evaluation of a Parent Education Program for Teen Mothers. *Journal of Child and Family Studies* 1997;6(2):165-175.

**Brophy & Honig 1997** {published data only}

Brophy H E and Honig A S. Delivering Service to Teenage Mothers: Issues and Outcomes. In: EDRS Availability: microfiche, paper. 1997.

**Butler et al 1993** {published data only}

Butler C, Rickel A U, Thomas E and Hendren M. An Intervention Program to Build Competencies in Adolescent Parents. *The Journal of Primary Prevention* 1993;13(3):183-198.

**Cook et al 1995** {published data only}

Cook A and Troike R. Adolescent Parenting: Contrasts in Self-Esteem and Locus of Control. In: EDRS Availability: microfiche and paper. 1995.

**Dickenson 1992**

{published data only}

Dickenson N S and Cudaback D J. Parent Education for Adolescent Mothers. The Journal of Primary Prevention 1992;13(1):23-35.

**Emmons & Nystul 1994**

{published data only}

Emmons R D and Nystul M S. The Effects of a Prenatal Course Including PREP for Effective Family Living on Self-Esteem and Parenting Attitudes of Adolescents: A Brief Report. Adolescence 1994;29(116):935-938.

**Field et al 1980**

{published data only}

Field T M, Widmayer S M, Stringer S and Ignatoff E. Teenage, Lower-Class Black Mothers and Their Preterm Infants: An Intervention and Developmental Follow-up. Child Development 1980;51:426-436.

**Field et al 1982**

{published data only}

Field T, Widmayer S, Stoller S. Effects of Parent Training on Teenage Mothers and Their Infants. Pediatrics 1982;69(6):703-707.

**Fulton et al 1991**

{published data only}

Fulton A M, Murphy K R, Anderson S L. Increasing Adolescent Mothers' Knowledge of Child Development: An Intervention Program. Adolescence 1991;26(101):73-81.

**Kissman 1992**

{published data only}

Kissman K. Parent Skills Training: Expanding School-Based Services for Adolescent Mothers. Research on Social Work Practice 1992;2(2):161-171.

**Koniak-Griffin 1999**

{published data only}

Koniak-Griffin D, Mathenge C, Anderson N L R and Verzemnieks I. An Early Intervention Program for Adolescent Mothers: A Nursing Demonstration Project. Journal of Obstetric, Gynecologic, & Neonatal Nursing. 1999;28(1):51-59.

**Porter 1984**

{published data only}

Porter L S. Parenting Enhancement Among High-Risk Adolescents. Nursing Clinics of North America 1984;19(1):89-102.

**Roosa & Vaughn 1983**

{published data only}

Roosa M W and Vaughn L. Teen Mothers Enrolled in an Alternative Parenting Program: a comparison with their peers. Urban Education 1983;18(3):348-360.

**Roosa 1984**

{published data only}

Roosa M W. Short-term Effects of Teenage Parenting Programs on Knowledge and Attitudes. *Adolescence* 1984;19(75):659-666.

**Treichel 1995**

{published data only}

Treichel C J. The MELD for Young Moms Program: a national study of demographics and program outcomes. EDRS Availability, microfiche and paper 1995.

**Wagner&Clayton 1999**

{published data only}

Wagner M M and Clayton S L. The Parents as Teachers Program: Results from Two Demonstrations. *The Future of Children* 1999;9(1):91-115.

**Weinman et al 1992**

{published data only}

Weinman M L, Schreiber N B and Robinson M. Adolescent mothers: Were there any gains in a parent education program? *Family Community Health* 1992;15(3):1-10.

**Westney et al 1987**

{published data only}

Westney O E, Cole J and Munford T L. The Effects of Prenatal Education Intervention on Unwed Prosepective Adolescent Fathers. *Journal of Adolescent Health Care* 1988;9:214-218.

*\* indicates the primary reference for the study*

## **Other references**

### **Additional references**

#### **Babb 1994**

Babb P. Teenage conceptions and fertility in England and Wales 1971-1991. *Population Trends* 1994;74:12-17.

#### **Barlow & Coren, 2000**

Barlow J and Coren E. Parenting Programmes for Improving Maternal Psychosocial Health. In: Issue 3, 2000. Oxford.: Update Software. Cochrane Library.

#### **Barlow 1997**

Barlow J. Systematic Review of the Effectiveness of Parent Training Programmes in Improving the Behaviour of 3-7 Year Old Children. Oxford: Health Services Research Unit, 1997.

#### **Barnard 1978**

Barnard K E. Nursing Child Assessment Teaching Scale Manual. Seattle: University of Washington NCAST Office, 1978.

#### **Barnard 1989**

Barnard KE, Hammond MA, Booth CL et al. Measurement and Meaning of Parent-Child Interaction. In: F Morrison, C Lord, Keating D, editor(s). *Applied Developmental Psychology*. Vol. 3. San Diego: Academic Press, 1989:39-80.

#### **Bavolek et al 1979**

Bavolek S J, Kline D F, McLaughlin J A, Publicover P R. Primary Prevention of Child Abuse and Neglect: Identification of High Risk Adolescents. *Child Abuse and Neglect* 1979;3:1071-1080.

#### **Bilodeau 1994**

Bilodeau A, Forget G, Tetreault J. Evaluation de l'efficacite d'un programme de prevention des grossesses a l'adolescence: S'exprimer pour une sexualite responsable [Evaluation of the effectiveness of a pregnancy prevention program: Speak up for a responsible sexuality]. *Canadian Journal of Community Mental Health* 1994;13(2):163-181.

#### **Black 1996**

Black M, Hutcheson J, Dubowitz H, Berenson H J, Starr R J. The roots of competence: mother-infant interaction among low-income, African-American families. *Applied Developmental Psychology* 1996;17:367-391.

**Bolton et al 1980**

Bolton F G, Laner R H, Kane S P. Child maltreatment risk among adolescent mothers: a study of reported cases. *American Journal of Orthopsychiatry* 1980;50:489-504.

**Boulton-Jones 1995**

Boulton-Jones C, McIlwaine G, and McInnery, K. Teenage pregnancy and deprivation. *BMJ* 1995;310:398-399.

**Bradley/Caldwell1977**

Bradley R H, Caldwell B M. Home observation for measurement of the environment: a validation study of screening efficiency. *American Journal of Mental Deficiency* 1977;81(5):417-420.

**Brooks-Gunn 1995**

Brooks-Gunn J and Chase-Lansdale P L. Adolescent Parenthood. In: M H Bornstein, editor(s). *Handbook of Parenting. Vol. 3. Status and Social conditions of Parenting.* New Jersey: Lawrence Erlbaum, 1995.

**Bucholz 1993**

Bucholz E S and Korn-Bursztyn C. Children of Adolescent Mothers: Are they at risk for abuse? *Adolescence* 1993;28:361-382.

**Bzoch & League 1971**

Bzoch K B and League R. *Assessing Language Skills in Infancy: A handbook for the multidimensional analysis of emergent language.* Gainsville, Fla: The Tree of Life Press, 1971.

**Catrone et al 1984**

Catrone C and Sadler L Siebert. A Developmental Model for Teenage Parent Education.. *Journal of School Health* 1984;54(2):63-67.

**Clark 1999**

Clark R. The parent-child early relational assessment: A factorial validity study. *Educational and Psychological Measurement* 1999;59(5):821-846.

**Cohen 1964**

Cohen Y A. *The Transition from Childhood to Adolescence.* Chicago: Aldine, 1964.

**Cornfield 1978**

Cornfield J. Randomization by Group: A Formal Analysis. *American Journal of Epidemiology* 1978;108(2):100-102.

**Danoff et al 1994**

Danoff N L, Kemper K J and Sherry B. Risk Factors for Dropping Out of a Parenting Education Program. *Child Abuse and Neglect* 1994;18(7):599-606.

**Davies et al 1993**

Davies CM, Noll RB, Davies WH, Bukowski WM. Mealtime interactions and family relationships of families with children who have cancer in long-term remission and controls. *Journal of the American Diet Association* 1993;93:773-776.

**Dawson 1997**

Dawson N. The Provision of Education and Opportunities for Future Employment for Pregnant Schoolgirls and Schoolgirl Mothers in the UK. *Children and Society* 1997;11(4):252-263.

**DOH 1999**

Secretary of State for Health. *Our Healthier Nation: A Contract for Health*. London: Stationery Office, 1999.

**Donner 1982**

Donner A. An Empirical Study of Cluster Randomization. *International Journal of Epidemiology* 1982;11(3):283-286.

**Erf 1981**

Erf L. A Moratorium for Growth: Group Work with Adolescent Mothers. *Clinical Social Work Journal* 1981;9(1):44-56.

**Erikson 1965**

Erikson E H. *Childhood and Society*. Harmondsworth: Penguin, 1965.

**Farran 1990**

Farran DC, Clark KA, Ray AR. Measures of parent-child interaction. In: ED Gibbs and DM Teti, editor(s). *Interdisciplinary Assessments of Infants*. Baltimore MD: Brookes Publishing Co, 1990:227-247.

**Farrington 1991**

Farrington D P. Childhood Aggression and Adult Violence: Early precursors and later life outcomes. In: D. J. Peper and K. H. Rubin, editor(s). *The Development and Treatment of Adult Aggression*. Hillsdale, N.J.: Lawrence Erlbaum, 1991:5-29.

**Forehand 1980**

Forehand R, Wells K and Griest D L. An Examination of the Social Validity of a Parent Training

Program. Behavior Therapy 1980;11(4):488-502.

**Frankel 1992**

Frankel F and Simmons JQ. Parent behavioral training: why and when some parents drop out. Journal of Clinical Child Psychology 1992;4:322-330.

**Franklin 2000**

Franklin C and Corcoran J. Preventing Adolescent Pregnancy: A Review of Programs and Practices. Social Work 2000;45(1):40-52.

**Guyatt et al 1994**

Guyatt G H Sackett D L Cook D J. Users guides to the medical literature. II. How to use and article about therapy or prevention. A. Are the results of the study valid? Evidence-Based Medicine Working Group. Journal of the American Medical Association 1994;270(21):2598-601.

**Haskett et al 1994**

Haskett M E, Johnson C A, Miller J W. Individual Differences in Risk of Child Abuse by Adolescent Mothers: Assessment in the Perinatal Period. Journal of Child Psychology and Psychiatry 1994;35(3):461-476.

**Held 1981**

Held L. Self-Esteem and the Social Network of the Young Pregnant Teenager. Adolescence 1981;16(64):905-912.

**Holden et al 1990**

Holden G W, Lavigne V V and Cameron A M. Probing the Continuum of Effectiveness in Parent Training: Characteristics of Parents and Preschoolers. Journal of Clinical Child Psychology 1990;19(1):2-8.

**Home Secretary 1998**

Home Secretary. Supporting Families: A Consultation Document. London: The Stationary Office, 1998.

**Honig 1991**

Honig A S and Pfannenstiel A E. Difficulties in reaching low-income new fathers: Issues and cases. Early Child Development and Care 1991;77:115-125.

**Hupertz 1995**

Hupertz MK. The effectiveness of teaching parenting skills with interactive video. Unpublished senior thesis, Ohio University, Athens. 1995.

**Jaeschke et al 1994**

Jaeschke R, Guyatt G, Sackett D L. Users guides to the medical literature. III. How to use an article about a diagnostic test. A. Are the results of the study valid? Evidence-Based Medicine Working Group. *Journal of the American Medical Association* 1994;271(5):398-91.

**Kacir 1997**

Kacir CD. Parenting adolescents wisely: the effectiveness of an interactive video intervention in Appalachia. Unpublished master's thesis, Ohio University, Athens 1997.

**Kazdin 1990**

Kazdin A E. Premature Termination from Treatment Among Children Referred for Antisocial Behavior. *Journal of Child Psychology and Psychiatry* 1990;31(3):415-425.

**Kiselica 1999**

Kiselica M S. Counselling Teen Fathers. In: Horne AM and Kiselica MS et al, editor(s). *Handbook of Counselling Boys and Adolescent Males: A practitioner's guide*. Thousand Oaks, CA: Sage Publications Inc., 1999:179-197.

**McBride 1991**

McBride B. Parent education and support programs for fathers: Outcome effects on paternal involvement. *Early Child Development and Care* 1991;67:73-85.

**Mecham et al 1967**

Mecham MJ, Jones J, Jex JL. Use of the Utah Test of Language Development for screening language disabilities. *Journal of Learning Disabilities* 1973;6(8):524-527.

**MentalHealthEurope99**

Mental Health Europe. *Mental Health Promotion for Children up to 6 Years: Directory of Projects in the European Union*. Brussels: European Regional Council of the World Federation for Mental Health, 1999.

**Mullin 1994**

Mullin E, Quigley K. and Glanville B. A controlled evaluation of the impact of a parent training programme on child behaviour and mothers' general well-being. *Counselling Psychology Quarterly* 1994;7(2):169-179.

**Murray et al 1994**

Murray D M, Rooney B L, Hannan P J, Peterson A V, Ary D V, Biglan A, Botvin G J, Evans R I, Flay B R, Fatterman R, Getz J G, Marek P M, Orlandi M, Pentz M A, Perry C L. and Schinke S P. Intraclass Correlation among Common Measures of Adolescent Smoking: Estimates, Correlates, and Applications in Smoking Prevention Studies. *American Journal of Epidemiology*



1994;140(11):1038-1049.

**Oz & Fine 1988**

Oz S and Fine M. A comparison of childhood backgrounds of teenage mothers and their non-mother peers: a new formulation. *Journal of Adolescence* 1988;11:251-261.

**Parekh 1997**

Parekh A and de la Rey C. Intragroup accounts of teenage motherhood: a community based psychological perspective. *South African Journal of Psychology* 1997;27(4):223-229.

**Perez 1997**

Perez M, San Lorenzo S and Perez M. Embarazo adolescent. Una propuesta de intervencion [Adolescent Pregnancy. A proposal for intervention]. *Rev-Enferm* 1997;20(229):10-5.

**Pharis 1978**

Pharis M E. Age and Sex Differences in Expectations for Infants and Parenting Among Couples in a First Pregnancy and Among University Students. University of Texas at Austin, 1978.

**Pierre 1997**

Pierre N and Cox J. Teen Pregnancy Prevention Programs. *Current Opinion oin Pediatrics* 1997;9(4):310-6.

**Pugh et al 1994**

Pugh G, De'Ath E, Smith C. *Confident Parents, Confident Children: Policy and practice in parent education and support*. London: National Children's Bureau, 1994.

**Pyper 2000**

Pyper C. Sexual Health Project IPPF Community Participation Approach Follow-up Evaluation 1999-2000 Unpublished report 2000.

**Ragozin et al 1982**

Ragozin A S, Basham R B, Crnic K A, Greenberg M T, Robinson N M. Effects of Maternal Age on Parenting Role. *Developmental Psychology* 1982;18(4):627-634.

**Reis & Herz 1987**

Reis J S and Herz E J. Correlates of Adolescent Parenting. *Adolescence* 1987;22(87):599-609.

**Rooney & Murray 1996**

Rooney B L and Murray D M. A Meta-Analysis of Smoking Prevention Programs After Adjustment for Errors in the Unit of Analysis. *Health Education Quarterly* 1996;23(1):48-64.

**Roosa 1983**

Roosa M W. A comparative study of pregnant teenagers' parenting attitudes and knowledge of sexuality and child development. *Journal of Youth and Adolescence* 1983;12:213-223.

**Schamess 1990**

Schamess G. Toward an understanding of the etiology and treatment of psychological dysfunction among single teenage mothers: part 1, a review of the literature. *Smith College Studies in Social Work* 1990;60(2):153-168.

**Scott 1987**

Scott M J and Stradling S G. Evaluation of a group programme for parents of problem children. *Behavioral Psychotherapy* 1987;15:24-239.

**Segal 1995**

Segal D. *Parenting Adolescents Wisely: Comparing interactive computer-laserdisc and linear-video methods of intervention in a parent-training program*. Athens: Ohio University, 1995.

**Smith 1993**

Smith, T. Influence of socioeconomic factors on attaining targets for reducing teenage pregnancies. *BMJ* 1993;306:1232-5.

**SocialExclUnit 1999**

Social Exclusion Unit. *Teenage Pregnancy*. London: The Stationary Office, 1999.

**Stockman 1997**

Stockman K D and Budd KS. Directions for Intervention with Adolescent Mothers in Substitute Care. *Families in Society: The Journal of Contemporary Human Services* 1997;78(6):617-623.

**Strain et al 1981**

Strain P S, Young C C and Horowitz J. Generalised behavior change during oppositional child training. *Behavior Modification* 1981;5:15-26.

**Todres&Bunston 1993**

Todres R, Bunston T. Parent-education programme evaluation: A review of the literature. *Canadian Journal of Community Mental Health*;12(1):225-257.

**UK Statistics 1998**

Office for National Statistics. *1997 Birth Statistics for England and Wales*. London: The Stationary Office, 1998.

**Utting et al 1993**

Utting D , Bright J, Henricson L. Crime and the Family: improving child rearing and preventing delinquency. Vol. Occasional Paper 16. London: Family Policy Studies Centre, 1993.

**Wakschlag 2000**

Wakschlag L S and Hans S L. Early Parenthood in Context: implications for development and intervention. In: C H.Zeanah, editor(s). Handbook of Infant Mental Health. New York: Guilford Press, 2000.

**Walker 1980**

Walker L. Early parental attitude and parent-infant relationship. In: Swain, Hawkings, Walker and Penticuff, editor(s). Exceptional Infant. Vol. 4. New York: Brunner/Mazel, 1980.

**Walker 1982**

Walker LO. Toward models of mother-infant dyadic development. Final Report to the Division of Nursing, Public Health Service, US Department of Health and Human Services edition. School of Nursing, University of Texas at Austin, 1982.

**Whitman et al 1987**

Whitman T L, Borkowski J G, Schellenbach C J and Nath P S. Predicting and Understanding Developmental Delay of Children of Adolescent Mothers: A Multidimensional Approach. American Journal of Mental Deficiency 1987;92(1):40-56.

## **Table of comparisons**

### 01 Parent-training vs. Control Group (Child Outcomes)

- 01 Nursing Child Assessment Teaching Scale (Baby's Subscale)
- 02 Nursing Child Assessment Teaching Scale (Responsiveness to Parent Sub-scale)
- 03 Bzoch-League Receptive-Expressive Emergent Language Scale (Receptive Language Score)
- 04 Bzoch-League Receptive-Expressive Emergent Language Scale (Expressive Language Score)
- 05 Utah test of Language Development

### 02 Parent-training vs. Control Group (Parent Outcomes)

- 01 Parental Attitudes Questionnaire
- 02 Parenting Knowledge Test
- 03 About Your Child's Eating Questionnaire
- 04 Parent Child Early Relational Assessment (modified) - Maternal Mealtime Communication
- 05 Nursing Child Assessment Teaching Scale (Total score)
- 06 Nursing Child assessment Teaching Scale (Mother's Subscale)
- 07 Nursing Child Assessment Teaching Scale (Cognitive Growth Fostering Sub-scale)
- 08 Semantic Differentials Measure - Myself as Mother
- 09 Semantic Differentials Measure - My Baby
- 10 Pharis Self-Confidence Scale
- 11 Caldwell Home Inventory (Birth to Three) (Maternal Involvement with the Child)

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## **Notes**

### **Unpublished CRG notes**

### **Published notes**

### **Amended sections**

None selected

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